

Please amend Claims 1, 9, 21, 22, 35, 40 and 51 as in the attached marked-up copy to read as follows:

D²
1. (Twice Amended) A printing plate material comprising a substrate on the surface of which a coat layer containing a titanium oxide photocatalyst and at least one member selected from the group consisting of a group VIB metal selected from the group consisting of W, Mo, and Cr, or a group IVA metal selected from the group consisting of Ge, Sn, and Pb, or an oxide of the group VIB or IVA metal, is formed directly or with an intermediate layer intervening between the substrate and the coat layer.

D³
5~~8~~. (Twice Amended) The printing plate material as claimed in claim 1, wherein the surface of said coat layer is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

D⁴
17~~21~~. (Twice Amended) The printing plate material as claimed in claim ~~16~~¹² wherein at least a portion of the surface of said coat layer is a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by light irradiation thereon and an electrochemical treatment thereon.

22¹⁹. (Twice Amended) The printing plate material as claimed in claim 1, wherein at least a portion of the surface of said coat layer is a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by cleaning the surface and renewing the surface of the coat layer containing the titanium oxide catalyst to renew the catalyst.

D⁵
31~~35~~. (Twice Amended) The printing plate material as claimed in claim 1, wherein at least a portion of the surface of said coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of

D⁵ (concluded)
at least 50° with a compound having an organic hydrophobic group in its molecule.

36 ~~40~~. (Twice Amended) The printing plate material as claimed in claim 1, which can be repeatedly used by repeating the steps of:

D⁶
preparing a printing plate in which at latent image, which comprises a hydrophobic portion which is not irradiated with light and a portion which is irradiated with light to be changed to a hydrophilic surface, is formed by irradiating the printing plate material with light having an energy higher than a band gap energy of the titanium oxide photocatalyst, and
renewing the printing plate material by bringing at least the hydrophilic portion on the surface of the plate material into contact with a compound having an organic hydrophobic group in its molecule after removing an ink from the surface of the printing plate material after completion of printing.

D⁷
30 ~~51~~. (Twice Amended) A method for preparing and renewing a printing plate material, the method of comprising the steps, which are performed in a printing machine, of preparing a printing plate by irradiation of a surface of a coat layer of a printing plate material as claimed in claim ~~24~~²¹ with light having a wavelength having an energy higher than a band gap energy of titanium oxide photocatalyst to cause the above described surface of the coat layer in the irradiated region to emerge,

cleaning the outermost surface including the surface of the coat layer which has emerged, and

renewing the coating layer.

[Please add the following Claims 52 to 89:]

52. (New) A printing plate material comprising a substrate on the surface of which a coat layer containing a titanium oxide photocatalyst and at least one member selected from the group consisting of Fe²⁺, Ni²⁺, Mn²⁺, Cr³⁺, and Cu²⁺ in the form of an ion or an oxide is

formed directly or with an intermediate layer intervening between the substrate and the coat layer.

53. (New) The printing plate material as claimed in claim 52, wherein the surface of said coat layer is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

54. (New) The printing plate material as claimed in claim 52, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state and is convertible to a hydrophilic surface having a water of contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

55. (New) The printing plate material as claimed in claim 52, wherein at least a portion of the surface of said coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by irradiation with a flux of energy thereon.

56. (New) The printing plate material as claimed in claim 52, wherein at least a portion of the surface of the coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by a chemical conversion treatment thereon.

57. (New) The printing plate material as claimed in claim 52, wherein at least a portion of the surface of the coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by irradiation with a flux of energy thereon and by a chemical conversion treatment thereon.

D7
(continued)

58. (New) The printing plate material as claimed in claim 52, wherein said coat layer has a surface of at least a part of which forms a part reconvertible to a hydrophilic surface by irradiation with light having a wavelength at an energy level higher than a band gap energy of the titanium oxide catalyst and a hydrophobic part which is not irradiated with the light,

where the surface of the coat layer when subjected to light irradiation thereon and an electrochemical treatment thereon is hydrophobic.

59. (New) The printing plate material as claimed in claim 58, wherein the surface of said coat layer is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

60. (New) The printing plate material as claimed in claim 58, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state and is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

61. (New) The printing plate material as claimed in claim 60, wherein the hydrophilic surface serves as a non-printing image portion and the remaining hydrophobic surface serves as a printing image portion.

62. (New) The printing plate material as claimed in claim 52, wherein at least a portion of the surface of said coat layer is a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° by light irradiation thereon and an electrochemical treatment thereon.

63. (New) The printing plate material as claimed in claim 52, wherein at least a portion the surface of said coat layer is a hydrophilic surface, and the hydrophilic surface is

reconvertible to a hydrophobic surface having a water contact angle of at least 50° by cleaning the surface and renewing the surface of the coat layer containing the titanium oxide catalyst to renew the catalyst.

64. (New) The printing plate material as claimed in claim 63, wherein the cleaning is polishing cleaning.

65. (New) The printing plate material as claimed in claim 58, which further comprises on said coat layer a coating layer comprising a compound which can be decomposed by irradiation with light having a wavelength at an energy level higher than a band gap energy level of the titanium oxide photocatalyst.

66. (New) The printing plate material as claimed in claim 52, wherein said at least one member selected from the group consisting of Fe^{2+} , Ni^{2+} , Mn^{2+} , Cr^{3+} , and Cu^{2+} is contained as an oxide.

67. (New) The printing plate material as claimed in claim 66, wherein the oxide is a compound oxide with titanium.

68. (New) The printing plate material as claimed in claim 65, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state.

69. (New) The printing plate material as claimed in claim 65, wherein the surface of said coat layer is exposable and is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with the light.

70. (New) The printing plate material as claimed in claim 65, wherein the surface of said coat layer has hydrophobicity in terms of a water contact angle of at least 50° in its initial state and is convertible to a hydrophilic surface having a water contact angle of 10° or less by irradiation with the light.

71. (New) The printing plate material as claimed in claim 70, wherein the hydrophilic surface serves as a non-printing image portion and a hydrophobic surface of the coating layer as a printing image portion.

72. (New) The printing plate material as claimed in claim 52, wherein at least a portion of the surface of said coat layer is convertible to a hydrophilic surface, and the hydrophilic surface is reconvertible to a hydrophobic surface having a water contact angle of at least 50° with a compound having an organic hydrophobic group in its molecule.

73. (New) The printing plate material as claimed in claim 72, wherein said compound having an organic hydrophobic group in its molecule is decomposable by a titanium oxide photocatalytic action under irradiation with light having an energy higher than a band gap energy of the titanium oxide photocatalyst.

74. (New) The printing plate material as claimed in claim 72, wherein said compound having an organic hydrophobic group in its molecule is a fatty acid dextrin.

75. (New) The printing plate material as claimed in claim 72, wherein said compound having an organic hydrophobic group in its molecule is an organic titanium compound.

76. (New) The printing plate material as claimed in claim 72, wherein said compound having an organic hydrophobic group in its molecule is an organic silane compound.

77. (New) The printing plate material as claimed in claim 52, which can be repeatedly used by repeating the steps of:

preparing a printing plate in which a latent image, which comprises a hydrophobic portion which is not irradiated with light and a portion which is irradiated with light to be changed to a hydrophilic surface, is formed by irradiating the printing plate material with light having an energy higher than a band gap energy of the titanium oxide photocatalyst, and renewing the printing plate material by bringing at least the hydrophilic portion on the

surface of the plate material into contact with a compound having an organic hydrophobic group in its molecule after removing an ink from the surface of the printing plate material after completion of printing.

78. (New) An apparatus for imaging the printing plate material as claimed in claim 52, on which an image can be written using a writing apparatus which comprises a light source for emitting light having an energy higher than a band gap energy of the titanium oxide photocatalyst, and which directly forms an image on the plate material based on digital data.

79. (New) A method for renewing a printing plate material as claimed in claim 52, the method comprising the steps of: cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst.

80. (New) A method for renewing a printing plate material as in the printing plate material of claim 52, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by irradiation with a flux of energy thereon.

81. (New) A method for renewing a printing plate material as in the printing plate material of claim 52, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by a chemical conversion treatment thereon.

82. (New) A method for renewing a printing plate material as in the printing plate

material of claim 52, the method comprising the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by irradiation with a flux of energy thereon and a chemical conversion treatment thereon in combination.

83. (New) A method for renewing a printing plate material as in the printing plate material of claim 58, the method comprising at least the steps of:

cleaning a surface of the coat layer containing the titanium oxide photocatalyst after completion of printing; and

then renewing the coat layer containing a titanium oxide photocatalyst by light irradiation thereon and an electrochemical treatment thereon.

84. (New) The method for renewing a printing plate material as claimed in claim 79, wherein the step of cleaning the surface of the coat layer and the step of renewing the coat layer are performed in a printing machine.

85. (New) A method for renewing a printing plate material as in the printing plate material of claim 65, the method comprising at least the steps of:

cleaning an outermost surface of the printing plate material including a surface of the coat layer which surface is hydrophilic in at least a portion thereof after completion of printing; and

then renewing the coating layer to cause a hydrophobic surface having a water contact angle of 50° or more to emerge.

86. (New) The method for printing plate material as claimed in claim 85, wherein the step of cleaning the outermost surface and the step of renewing the coating layer are performed in a printing machine.

D7
(concluded)

87. (New) A method for preparing and renewing a printing plate material, the method comprising the steps, which are performed in a printing machine, of preparing a printing plate by irradiation of a surface of a coat layer of a printing plate material as claimed in claim 52 with light having a wavelength having an energy higher than a band gap energy of the titanium oxide photocatalyst,

cleaning the surface of the coat layer, and

renewing the coat layer.

88. (New) A method for preparing and renewing a printing plate material, the method comprising the steps, which are performed in a printing machine, of preparing a printing plate by irradiation of a surface of a coat layer of a printing plate material as claimed in claim 65 with light having a wavelength having an energy higher than a band gap energy of titanium oxide photocatalyst to cause the above described surface of the coat layer in the irradiated region to emerge,

cleaning the outermost surface including the surface of the coat layer which has emerged, and

renewing the coating layer.

43 89. (New) A printing plate material comprising a substrate on the surface of which a coat layer containing a titanium oxide photocatalyst and at least one member selected from the group consisting of Mn^{2+} , Cr^{3+} and Cu^{2+} in the form of an ion or an oxide is formed directly or with an intermediate layer intervening between the substrate and the coat layer.

BASIS FOR THE AMENDMENT

The specification has been amended to correct the obvious typographical error noted by the Examiner.